

CLAIMS

What is claimed is:

1. An electrostatically driven optical membrane, comprising:
a support structure;
5 a membrane structure separated from the support structure by an electrostatic cavity;
and
a tab on the membrane structure that increases a rigidity of the membrane structure
to deflection after a predetermined amount of deflection.
- 10 2. An optical membrane as claimed in claim 1, wherein the tab comprises a
cantilevered portion that engages the membrane structure after deflection.
3. An optical membrane as claimed in claim 1, wherein the membrane structure
comprises a tether connecting a membrane body to an outer portion.
4. An optical membrane as claimed in claim 3, wherein a base of the tab is connected
to the tether.
- 15 5. An optical membrane as claimed in claim 3, wherein a base of the tab is connected
to the outer portion.
6. An optical membrane as claimed in claim 1, wherein a base of the tab is connected
to the membrane structure.
- 20 7. An optical membrane as claimed in claim 1, wherein the tab extends radially on the
membrane structure.
8. A method for fabricating an optical membrane, comprising:
patterning a membrane structure; and
forming a tab on the membrane structure that comprises a base and a cantilevered
portion and that reduces deflection of the membrane structure.

9. A method as claimed in claim 8, further comprising forming an electrostatic cavity to enable controlled deflection of the membrane structure.

10. A method as claimed in claim 8, wherein the step of patterning the membrane structure comprises patterning a tether, which extends between a body and an outer portion of the membrane structure.

11. A method as claimed in claim 8, wherein the step of forming the tab comprises:
depositing a masking layer over the a membrane layer;
exposing regions of the membrane layer; and
depositing a tab layer on the exposed portions of the membrane layer.

12. A method as claimed in claim 11, further comprising patterning the tab layer.

13. A method as claimed in claim 11, wherein the masking layer functions as a spacer layer determining a distance between a cantilevered portion of the tab and the membrane structure.

14. A method as claimed in claim 8, wherein the step of patterning the membrane structure comprises patterning a tether between a body and an outer portion of the membrane structure.